Condensed Title:

A resolution of the Mayor and City Commission of the City of Miami Beach, Florida, approving a roadway configuration for 16th Street from Alton Road to Lenox Court that consists of no parking on the north side, parking on the south side, two travel lanes, a left turn lane, and bike lanes, which was presented at the Neighborhoods/Community Affairs Committee on January 21, 2009.

Key Intended Outcome Supported:

Improve or maintain traffic flow.

Supporting Data (Surveys, Environmental Scan, etc.): Transportation remains one of the most significant areas to address from the survey results (often mentioned as a key quality of life issue). 24% of residents rated traffic flow excellent or good, and 37% as poor. 35% of residents rated the availability of pedestrian trails and bicycle paths/lanes as excellent or good, and 30% as poor.

lssue:

Shall the City Commission adopt the Resolution?

Item Summary/Recommendation:

In September 2007, the Public Works Department striped and signed bike lanes on 16th Street between Bay Road and Washington Avenue. This required the removal of a left turn lane on 16th Street approaching Alton Road westbound. After the implementation of the bike lanes, residents complained to elected officials and City staff that the elimination of the left turn lane resulted in a significant back-up of vehicles. City staff was directed by the Office of the Mayor and Commissioners to address this issue. The City retained the services of PBS&J to perform a qualitative analysis of the operational conditions of the existing intersection with bike lanes and the results of the study concluded that a queue on the westbound direction was caused by left turn vehicles blocking the westbound through movement. An option to improve this condition would be to introduce a left turn lane on 16th Street at Alton Road; however doing so would require either the elimination of the bike lane or elimination of the on-street parking on the north side of 16th Street between Alton Road and Lenox Court. At the November 24, 2008 Neighborhoods/Community Affairs Committee meeting, a motion was made to remove the five (5) existing parking spaces on the north side of 16th Street from Alton Road to Lenox Court to allow sufficient space for both the bike lane and a dedicated left turn lane. A relatively high number of bicyclists utilize 16th Street, since it provides directness and connectivity to bicycle traffic generators. The existing bike lanes provide a safer environment for these bicyclists, since the bike lanes minimize potential conflicts between them and motorized vehicles either parallel parked on 16th Street or traveling through the intersection of 16th Street at Alton. City staff met with Miami-Dade County on December 15, 2008 to discuss the intersection and the proposed roadway configuration received preliminary approval. At the January 21, 2009 Neighborhoods/ Community Affairs Committee meeting, a motion was made to approve a proposed cross-section of no on-street parking on the north side, on-street parking on the south side, two travel lanes, a left turn lane, and bike lanes.

ACCEPT THE CITY MANAGER'S RECOMMENDATION.

| | | | | _ | | | |
|---|------|--------|------|------|-------|----------|--|
| L | \dvi | sorv B | oard | Reco | ommer | ndation: | |

| Source of | | Amount | Account |
|-----------|-------|--------|---------|
| Funds: | | | |
| | 1 | | |
| | 2 | | |
| | 3 | | |
| OBPI | Total | | |

City Clerk's Office Legislative Tracking:

| | | | | | - |
|----------|----------|-----|-----|------|---|
| Fernande | o Vazaue | D F | ext | 6399 | |

Fernando Vazquez, P.E., ext. 6399

| Sign-Oπs: | | | | |
|---------------------|------------------------|-----|---------|------|
| Department Director | Assistant City Manager | C | ity Man | ager |
| RCM | RCM | JMG | X | _> |

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City of Miami Beach, 1700 Convention Center Drive, Miami Beach, Florida 33139, www.miamibeachfl.gov

COMMISSION MEMORANDUM

TO: Mayor Matti Herrera Bower and Members of the City Commission

FROM: City Manager Jorge M. Gonzalez

DATE: February 25, 2009

SUBJECT: A RESOLUTION OF THE MAYOR AND CITY COMMISSION OF THE CITY OF MIAMI

BEACH, FLORIDA, APPROVING A ROADWAY CONFIGURATION FOR 16TH STREET FROM ALTON ROAD TO LENOX COURT THAT CONSISTS OF NO PARKING ON THE NORTH SIDE, PARKING ON THE SOUTH SIDE, TWO TRAVEL LANES, A LEFT TURN LANE, AND BIKE LANES, WHICH BEST SUPPORTS THE GOALS ESTABLISHED IN THE APPROVED 16TH STREET OPERATIONAL IMPROVEMENT AND ENHANCEMENT PROJECT BASIS OF DESIGN REPORT AND WHICH WAS PRESENTED AT THE NEIGHBORHOODS/COMMUNITY AFFAIRS COMMITTEE ON

JANUARY 21, 2009.

ADMINISTRATION RECOMMENDATION

Adopt the Resolution.

BACKGROUND

A Basis of Design Report (BODR) was prepared for the 16th Street Operational Improvements and Enhancement project and subsequently reviewed and approved by the Commission on September 5, 2007. After existing base data for the project area was collected and analyzed, one of the goals identified in the conceptual design to minimize speeds along the corridor was traffic calming. It was indicated that traffic calming was a major missing element along the entire corridor as well as a primary recommendation for a pedestrian-friendly environment along 16th Street. The actual condition of the corridor, undivided with a wide right-of-way, was noted to encourage increased travel speeds. The wide roadway width meant that pedestrians were exposed to significant crossing distances. Sight distance was deficient and parked vehicles and signs obstructed pedestrian's views. Design recommendations included narrower lanes to reduce drive speeds, bulb outs at intersections to announce pedestrian crossings (and reduce pedestrian crossing distances) and special pavement crosswalks and parking lanes to designate these as special areas.

As part of the approved BODR some of the site design recommendations to create a more pedestrian-friendly environment included a street cross section consisting of a two 10-foot travel lanes, two 5-foot bike lanes, two 8-foot on-street parking lanes, two 12-foot sidewalks in the commercial zone between, Collins Avenue and Washington Avenue and between Alton Road and Lenox Avenue and 6- to 8-foot, variable-width sidewalks in the residential zone, between Lenox Avenue and Washington Avenue, with the planting areas next to private properties varying in width. See proposed cross-section identified in the BODR (Attachment 1, Proposed BODR Cross-sections for 16th Street).

The development of the BODR included an intensive public involvement process with substantial public input. The following chart summarizes the underlined preferences of various stakeholders:

| | Decorative Stamped Asphalt | Bicycle Lanes | Wider Sidewalks | Enhanced Landscaping | Parking | Removal of Encroachments |
|---|-------------------------------|------------------|--------------------|-------------------------|---------|-----------------------------|
| Historical Preservation Board | | | • | • | • | • |
| Internal Visioning Session | | П | | • | • | |
| Community Workshop | | • | | • | | |
| Transportation and Parking Committee | | | • | • | | |
| Planning Board | • | | • | • | | • |
| Flamingo Neighborhood Association | | | • | • | | |
| Finance and Citywide Projects Committee | | | • | • | | • |

As noted in this chart, almost every stakeholder group preferred bike lanes.

In September 2007, the Public Works Department striped and signed bike lanes on 16th Street between Bay Road and Washington Avenue. This required the removal of a left turn lane on 16th Street approaching Alton Road westbound. After the implementation of the bike lanes, some residents complained to elected officials and City staff that the elimination of the left turn lane resulted in a significant back-up of vehicles. City staff was directed by the Office of the Mayor and Commissioners to evaluate this issue further and determine the viability of these complaints.

<u>ANALYSIS</u>

Pursuant to these complaints, the City retained the services of PBS&J to perform a qualitative analysis of the operational conditions of the existing intersection with bike lanes during the morning (7:00 a.m. to 9:00 a.m.) and afternoon (4:00 p.m. to 6:00 p.m.) peak hours in order to be able to provide an assessment of the existing roadway configuration (see Attachment 2, PBSJ Study). The results of the study provided the following conclusions based on field observations:

- The right turning vehicles on both directions used the bike lane to turn, forcing bicyclists to use the sidewalk.
- The stacking on the westbound direction was caused by left turn vehicles blocking the westbound through movement while they wait for an adequate gap from opposing traffic that crosses the intersection.

The study concluded that the current condition shows stacking for the westbound movement at the intersection. An option to improve this condition would be to introduce a left turn lane on 16th Street at Alton Road. Given the current street width, to introduce a dedicated left turn lane would require the removal of the 16th Street bike lanes from Lenox Avenue up to the intersection at Alton Road or the elimination of on-street parking in the same area.

An adverse effect to removing the bike lanes would be that the continuity of bike lanes would be truncated at Lenox Avenue and therefore would introduce a safety issue to bicyclists trying to reach Alton Road as it would force the bicyclists to use the sidewalk or to have to share the street with motorized vehicles crossing 16th Street at this intersection.

A relatively high number of bicyclists utilize 16th Street, since it provides directness and connectivity between major street collectors such as Alton Road to points of destination such as Washington Avenue and the beach as well as other points of interest in South Beach. The existing bike lanes provide a safer environment for these bicyclists, since the bike lanes minimize potential conflicts between them and motorized vehicles either parallel parked on 16th Street or traveling through the intersection of 16th Street at Alton.

To evidence this, bicycle counts were conducted at the intersection of 16th Street and Alton Road before and after the bike lanes were striped along 16th Street. Miami-Dade County conducted bicycle counts in February 2007. There were a total of 20 bicyclists counted on a weekday between the hours of 7-9am, and a total of 31 bicyclists on a Saturday between the hours of 12-2pm. The City of Miami Beach Public Works Department conducted bicycle counts after the bike lanes were striped in May 2008 during the same days and hours. The number of bicyclists increased on the weekday from 20 to 28 bicyclists, and on Saturday they increased from 31 to 121. This dramatic increase demonstrates how well the bike lanes are being utilized by the community, particularly during weekend hours for both transportation and recreational use. Table 1 below summarizes the before and after bicycle counts at 16th Street and Alton Road.

Table 1. Bicycle Counts at 16th Street and Alton Road

| BEFORE | | AFTER | | | |
|-------------|-----|----------|----------|------|--|
| February 20 | 007 | May 200 | % Change | | |
| Weekday | 20 | Weekday | 28 | 40% | |
| Saturday | 31 | Saturday | 121 | 290% | |

The City conducted additional bicycle counts in November 2008 for all turning movements along both Alton Road and 16th Street between the hours of 4-6pm. According to these counts, there were a total of 91 bicyclists traveling eastbound/westbound along 16th Street and a total of 105 bicyclists traveling northbound/southbound along Alton Road (see Attachment 3, 16th St. and Alton Rd. Bicycle Counts).

NEIGHBORHOODS/COMMUNITY AFFAIRS COMMITTEE

At the November 24, 2008 Neighborhoods and Community Affairs Committee meeting, a motion was made to remove the five (5) existing parking spaces on the north side of 16th Street from Alton Road to Lenox Court. The Committee deemed that the available right of way can only support two out of three possible uses and that the turn lane and bike lane were higher priority than the parking spaces. This option would allow sufficient space for both the bike lane and a dedicated left turn lane. At the December 10, 2008 City Commission Meeting, the City Commission referred this item to the next Neighborhoods and Community Affairs Committee meeting for additional discussion.

Subsequent to the December 10th City Commission meeting, City staff met with Miami-Dade County on December 15, 2008 to discuss the intersection and the proposed roadway configuration received preliminary approval. At the January 21, 2009 Neighborhoods and Community Affairs Committee meeting, a motion was made to approve the proposed cross-section (see Attachment 4, Proposed Cross-section for 16th Street and Alton Road). While the removal of parking spaces is generally of concern anywhere in the City, the intersection configuration recommended by city and county staff addresses a good solution for both bicycle use and safety and for vehicle movements. As such, the trade off of parking spaces in this instance is justified.

CONCLUSION:

The Administration recommends that the Mayor and City Commission adopt and approve a

roadway configuration for 16th Street from Alton Road to Lenox Court that consists of no on-street parking on the north side, on-street parking on the south side, two travel lanes, a left turn lane, and bike lanes. This street cross section best supports the approved BODR for the 16th Street Operational Improvement and Enhancement project goals to improve the safety of the corridor for bicyclists and pedestrians and to enhance the quality of life for local residents and visitors.

Attachments:

1. Proposed BODR Cross-sections for 16th Street

2. PBSJ Study

3. 16th St. and Alton Rd. Bicycle Counts

4. Proposed Cross-section for 16th Street and Alton Road

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A RESOLUTION OF THE MAYOR AND CITY COMMISSION OF THE CITY OF MIAMI BEACH, FLORIDA, APPROVING A ROADWAY CONFIGURATION FOR 16TH STREET FROM ALTON ROAD TO LENOX COURT THAT CONSISTS OF NO PARKING ON THE NORTH SIDE, PARKING ON THE SOUTH SIDE, TWO TRAVEL LANES, A LEFT TURN LANE, AND BIKE LANES, WHICH BEST SUPPORTS THE GOALS ESTABLISHED IN THE APPROVED 16TH STREET OPERATIONAL IMPROVEMENT AND ENHANCEMENT PROJECT BASIS OF WHICH WAS PRESENTED AT AND DESIGN REPORT NEIGHBORHOODS/COMMUNITY AFFAIRS COMMITTEE ON JANUARY 21, 2009.

WHEREAS, a Basis of Design Report (BODR) was prepared for the 16th Street Operational Improvements and Enhancement project and subsequently reviewed and approved by the Commission on September 5, 2007; and

WHEREAS, as part of the approved BODR some of the site design recommendations to create a more pedestrian-friendly environment included a street cross section consisting of a two 10-foot travel lanes, two 5-foot bike lanes, two 8-foot on-street parking lanes, two 12-foot sidewalks in the commercial zone and 6- to 8-foot, variable-width sidewalks in the residential zone, with the planting areas next to private properties varying in width; and

WHEREAS, the development of the BODR included an intensive public involvement process with substantial public input and almost every stakeholder group preferred bike lanes; and

WHEREAS, in September 2007, the Public Works Department striped and signed bike lanes on 16th Street between Bay Road and Washington Avenue and this required the removal of a left turn lane on 16th Street approaching Alton Road westbound; and

WHEREAS, after the implementation of the bike lanes, residents complained to elected officials and City staff that the elimination of the left turn lane resulted in a significant back-up of vehicles, and City staff was directed by the Office of the Mayor and Commissioners to address this issue; and

WHEREAS, the City retained the services of PBS&J to perform a qualitative analysis of the operational conditions of the existing intersection with bike lanes and the results of the study concluded that a queue on the westbound direction was caused by left turn vehicles blocking the westbound through movement; and

WHEREAS, an option to improve this condition would be to introduce a left turn lane on 16th Street at Alton Road; however doing so would require either the elimination of the bike lane or elimination of the on-street parking on the north side of 16th Street between Alton Road and Lenox Court; and

WHEREAS, at the November 24, 2008 Neighborhoods/Community Affairs Committee meeting, a motion was made to remove the five (5) existing parking spaces on the north side of 16th Street from Alton Road to Lenox Court to allow sufficient space for

both the bike lane and a dedicated left turn lane and at the January 21, 2009 Neighborhoods/ Community Affairs Committee meeting, a motion was made to approve a proposed cross-section of no parking on the north side, parking on the south side, two travel lanes, a left turn lane, and bike lanes; and

WHEREAS, a relatively high number of bicyclists utilize 16th Street, since it provides directness and connectivity to bicycle traffic generators, and the existing bike lanes provide a safer environment for these bicyclists, since the bike lanes minimize potential conflicts between them and motorized vehicles either parallel parked on 16th Street or traveling through the intersection of 16th Street at Alton; and

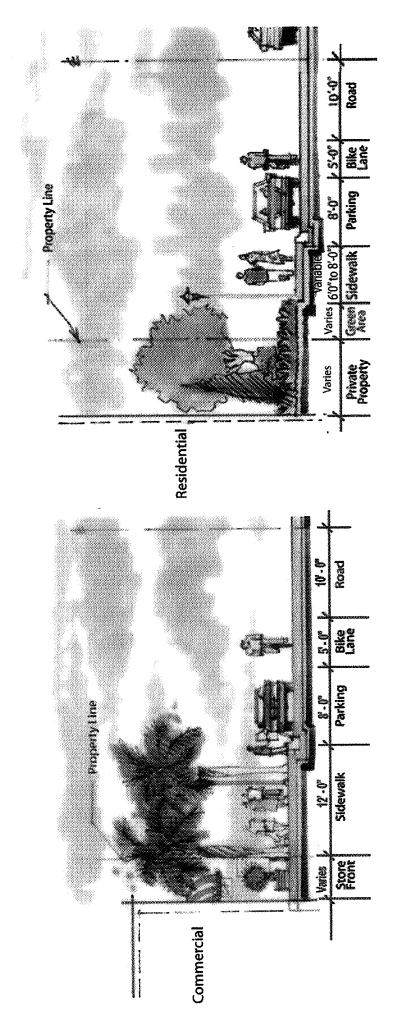
WHEREAS, the City Administration would recommend that the Mayor and City Commission approve a roadway configuration for 16th Street from Alton Road to Lenox Court that consists of no parking on the north side, parking on the south side, two travel lanes, a left turn lane, and bike lanes, which best supports the approved BODR for the 16th Street Operational Improvement and Enhancement project goals and which was presented at the Neighborhoods/Community Affairs Committee on January 21, 2009.

NOW, THEREFORE, BE IT DULY RESOLVED BY THE MAYOR AND THE CITY COMMISSION OF THE CITY OF MIAMI BEACH, FLORIDA, that the Mayor and City Commission hereby approve a roadway configuration for 16th Street from Alton Road to Lenox Court that consists of no parking on the north side, parking on the south side, two travel lanes, a left turn lane, and bike lanes, which best supports the goals established in the approved 16th Street Operational Improvements and Enhancement Project Basis of Design Report and which was presented at the Neighborhoods/Community Affairs Committee on January 21, 2009.

| | PASSED and ADOPTED this | day of | , 2009. | |
|-----------|-------------------------|--------|---------|--|
| ATTEST: | | | MAYOR | |
| CITY CLEF | RK | | m | |

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APPROVED AS TO FORM & LANGUAGE & FOR EXECUTION



16th Street Residential Zone

16th Street Commercial Zone



Figure 2 - 4
Revised Concept Plan Typical Section
16th Street Phase I - Basis of Design Report
City of Miami Beach, Florida

Attachment 2



MEMORANDUM

To: Xavier Falconi, P.E., Transportation Manager, City of Miami Beach

From: Sanhita Lahiri, P.E., PTOE

Cc: Rafiq Alqasem, P.E., PTOE

Christine Leduc, Transportation Coordinator, City of Miami Beach

Date: June 26, 2008

Re: Intersection of 16th Street and Alton Road – Left turn storage lanes on the East

and Westbound direction.

PBS&J has performed a field review of the intersection of 16th Street and Alton Road, and have also reviewed the BODR SYNCHRO model of this intersection, provided by the City. Following are the summary and recommendations:

• It was identified in the meeting with the City of Miami Beach and PBS&J on May 6, 2008 that the methodology to be adopted for the study would be –

- (a) Modify the 2007 PM peak BODR SYNCHRO model (obtained from the City) for the intersection 16th Street and Alton Road, to test a split phase operation for the Eastbound and Westbound movements. It was agreed that no other parameters in the model would be changed so that the delay before and after may be compared.
- (b) Depending on the delay comparison, a further course of action will be decided, including the possibility of full traffic impact study.
- Review of the 2007 PM peak BODR SYNCHRO model showed that the intersection was evaluated with an Eastbound left turn storage lane of 80ft and a Westbound left turn storage lane of 110ft. The existing operating conditions are however much more constrained with no left turn storage lanes on the eastbound and westbound direction. The model was modified and the left turn lanes were eliminated and split phase introduced. Table 1 below shows that removing the left turn storage lane, cause significantly more delay to both the approaches and introduction of split phase on the Eastbound and Westbound direction further exacerbate the condition.

Table 1-Summary of Approach Delays Obtained from SYNCHRO Model for 16^{th}

| Street and Alte | on Roau | | | TO TO THE TOTAL TOTA | | |
|-----------------|---|---|--|--|--|--|
| | | BODR MODEL H DELAY (s) | 2007 PM PEAK MODEL WITH SPLIT PHASE FOR EASTBOUND AND WESTBOUND MOVEMENTS APPROACH DELAY (s) | | | |
| Approach | Obtained from City of Miami Beach – Including Eastbound and Westbound Left turn Storage lanes | Modified by PBS&J — Excluding Bastbound and Westbound Left turn Storage lanes | Modified by PBS&J — Including Eastbound and Westbound Left turn Storage lanes | Modified by PBS&J – Excluding Eastbound and Westbound Left turn Storage lanes | | |
| Eastbound | 46.7 | 195.8 | 74.2 | 362.5 | | |
| Westbound | 33.4 | 34.1 | 66.0 | 84.5 | | |

• The BODR reports the PM peak hour to be between 5:00PM and 6:00PM, and field review was done on May 20, 2008 to observe and assess the existing conditions including geometric and operational during the above mentioned time period.

It was observed that the existing Eastbound and Westbound vehicular movement at the intersection of 16th Street and Alton Road has a shared operation with only 1 lane sharing the Left, Through and Right turn movements. The roadway at this location also has bike lanes on both sides of the roadways.

The signal operation shows the Eastbound and Westbound left turn movements operating on a permissive phase. Queues on both directions were observed and sample counts were taken for 15 consecutive signal cycles (130sec per cycle). The field observation clearly shows no left over queues on the Eastbound direction and up to 14 cars on the Westbound direction. This does not match with the queues observed in the 2007 PM peak BODR SYNCHRO model (the model shows total 463veh on the Eastbound and 122veh on the Westbound direction). Table 2 below shows the left over queue data collected in the field.

Table 2 - Sample Queue Counts Observed on May 20, 2008 at the intersection of 16th Street and Alton Road

| intersection of 10" Street | and Aiton Road | - Bussiania Cualo (scalo) |
|----------------------------|----------------|---------------------------|
| Sample Queue Counts | | Previous Cycle (veh) |
| Signal Cycle | Eastbound | Westbound |
| 1st Cycle | 0 | 7 |
| 2nd Cycle | 0 | 0 |
| 3rd Cycle | 0 | 0 |
| 4th Cycle | 0 | 0 |
| 5th Cycle | 0 | 0 |
| 6th Cycle | 0 | . 1 |
| 7th Cycle | 0 | 7 |
| 8th Cycle | . 0 | 4 |
| 9th Cycle | 0 | 9 |
| 10th Cycle | 0 | 14 |
| 11th Cycle | 0 | 9 |
| 12th Cycle | 0 | 0 |
| 13th Cycle | 0 | 0 |
| 14th Cycle | 0 . | 3 |
| 15th Cycle | 0 | 4 |



It was also observed that the right turning vehicles on both the directions used the bike lanes to turn, forcing bikers to use the sidewalk, a significant number of bikers were observed to this in the time period observed.

The queue on the westbound direction was observed to be caused by the left turn vehicles blocking the westbound through movement. As mentioned earlier the left turn movement operates on a permissive phase and has to wait for adequate gap from opposing traffic to cross the intersection.

• The qualitative field assessment shows that westbound movement has queues, which spill back to the intersection on the east of Alton Road. This condition could be improved by introducing a left turn lane. The physical geometry of the roadway at this point of time does not offer any other option than removing the bike lane and installing a left turn lane. However it may be noted that the removal of a bike lane from a particular section of roadway with continuous bike lanes, may not be safe as it would force the bikers on the sidewalk in that section.

| | * | - → | * | 1 | * | * | * | † | <i>></i> | • | ↓ | 4 |
|--|---------------------------------------|--------|--|---------------|----------|--|---|------------|--|---|-------------|--|
| Lene Group | EBL | #EBII# | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBITE | SBR |
| Lane Configurations | ሻ | 1→ | | *5 | ₽ | | ` | ት ጮ | | ች | ↑ ↑ | 7 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Width (ft) | 10 | 16 | 12 | 10 | 16 | 12 | 10 | 12 | 12 | 10 | 12 | 10 |
| Storage Length (ft) | 80 | 1.11 | ;:::0 | 110 | | #O ₂ | 120 | T. | 1 0 | 140 | حدث أستاع | . 75 |
| Storage Lanes | 1 | | 0 | 1 | | 0 | 1 | | 0 | ,,,,, <u>,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,</u> | |] |
| Total Lost Time (s) | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4:0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 |
| Leading Detector (ft) | 50 | 50 | | 50 | 50 | | 50 | 50 | | 50 | 50 | 50 |
| Trailing Detector (ft) | Ö | 0 | | 0 | . 0 | | 0 | 0 | | 0 | 0 | 0 |
| Turning Speed (mph) | 15 | | 9 | 15 | | 9 | 15 | | 9 | 15 | | 9 |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1:00 | 1.00 | 1.00 | 0.95 | 0.95 | 1.00 | 0.95 | 1.00 |
| Frt · · · | | 0.912 | | | 0.955 | · · · | | 0.992 | amaning property. | 0.050 | | 0.850 |
| Fit Protected | 0.950 | | 7.74 | 0.950 | | The state of the s | 0.950 | | | 0.950 | 0074 | 1470 |
| Satd. Flow (prot) | 1652 | 1637 | 0 | 1652 | 1714 | 0 | 1652 | 3511 | <u>0</u> . | 1652 | 3274 | 1478 |
| FIt Permitted | 0.652 | | | 0.402 | | | 0.274 | | | 0.199 | 0074 | 4470 |
| Satd. Flow (perm) | 1134 | 1637 | 0 | 699 | 1714 | 0 | 476 | 3511 | 0 | 346 | 3274 | 1478 |
| Right Turn on Red | | | Yes | 1414 | 4. | Yes: | ه او ا ۱۱ او | : : | Yes | فللمحاة فسنتسط | | Yes |
| Satd. Flow (RTOR) | a lacitation and a second as a second | 56 | | | 17 | | · · · · · · · · · · · · · · · · · · · | 7 | | 2.50 | | 32 |
| Headway Factor | €/-1.09 | 1,05 | 1.00 | 1.09 | 1.05 | 1.00 | 1.09 | 1.00 | 1.00 | 1.09 | 1.11 | 1.09 |
| Link Speed (mph) | | 30 | | | 30 | مرور در المراجعة | ***-***** | 30 | Trecesession | | 30 | COLUMN TO THE STATE OF THE STAT |
| Link Distance (ft) | | 407 | | | 196 | | | 276 | | | 591 | ar Tu |
| Travel Time (s) | 4. 1 1 1 1 1 1 1 1 1 1 1 1 | 9.3 | | | 4.5 | | | 6.3 | | | 13.4 | 7.70 |
| Volume (vph) | 215 | 102 | 146 | 22 | 70, | 30 | 101 | 886 | 48 | 159 | 895 | 49 |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Parking (#/hr) | | 10 | e de la composition della comp | | 45.410 | | | deretter | | <u> </u> | 10 | |
| Adj. Flow (vph) | 234 | 111 | 159 | 24 | 76 | 33 | 110 | 963 | 52 | 173 | 973 | 53 |
| Lane Group Flow (vph) | 234 | 270 | *********** 0 | 24 | 109 | , O. | | 1015 | | وماسوق المستسارة والمساورة | 973 | 53 |
| Turn Type | Perm | | | Perm | | | Perm | | در پاکستان داره دارستان دارست دارست دارستان دارستان دارستان دارستان دارستان دارستان دارستان دا | pm+pt | | Perm |
| Protected Phases | | 4. | 1 :4: | | . 8 | | | 2 | | <u> </u> | 6 | |
| Permitted Phases | 4 | | | 8 | | | 2 | | | 6 | | o Second |
| Detector Phases | 4. | 11. | | : 12 8 | 8 | | 2 | 2 | 4774V35#6 | | 6 | 20.0 |
| Minimum Initial (s) | 27.0 | 27.0 | | 27.0 | 27.0 | en en en en en en en | 30.0 | 30.0 | economica | 5.0 | 30.0 | 30.0 |
| Minimum Split (s) | 38.0 | 38.0 | | 38:0 | /38.0 | | 79.0 | 79.0 | | 8:0 | 79.0 | 79.0 |
| Total Split (s) | 42.0 | 42.0 | 0.0 | 42.0 | 42.0 | 0.0 | 79.0 | 79.0 | 0.0 | 9.0 | 88.0 | 88.0 |
| Total Split (%) | 32.3% | | 0.0% | 32.3% | | 0.0% | 60.8% | | 0:0% | | 67.7% | |
| Maximum Green (s) | 37.0 | 37.0 | | 37.0 | 37.0 | معاملة المعارضة المعارضة | 74.0 | 74.0 | | 6.0 | 83.0 4.0 | 83.0 |
| Yellow Time (s) | 4.0 | 4.0 | | . 4.0 | 4.0 | + engrie | 4.0 | 4.0 | | 3.0 | | 4.0 1.0 |
| All-Red Time (s) | 1.0 | 1.0 | | 1.0 | 1.0 | | 1.0 | 1.0 | | 0.0 | 1.0 | |
| Lead/Lag : " / / / / / / | | | | rier att | 20. 细胞 | 的图片。 表现 | -Lag | Lag | | Lead | | |
| Lead-Lag Optimize? | | | | | | | Yes | Yes | ar elle allesticates | Yes | 3.0 | 2.0 |
| Vehicle Extension (s) | 3,0 | | | 3.0 | 3.0 | | 3.0 | 3,0 | | 3.0 | | |
| Recall Mode | None | None | | None | None | | C-Max | | : | None | C-Max | |
| Walk Time (s) | 7.0- | | | 7.0 | 7.0 | | 56.0 | 56.0 | | | | 56.0 |
| Flash Dont Walk (s) | 26.0 | 26.0 | | 26.0 | 26.0 | | 18.0 | 18.0 | Becker 1997 | a eragesy | 18.0 | 18.0 |
| Pedestrian Calls (#/hr) | | 0,, | 150 | | <u>0</u> | PECSED. | <u></u> ;0, | | 组制 95% | | 0 | -0 |
| Act Effct Green (s) | 32.7 | 32.7 | | 32.7 | 32.7 | a continue de la constanta de | 78.5 | 78.5 | | 89.2 | 89.2 | 89.2 |
| Actuated g/O Ratio | √⊹0.25 | | | | | | 0,60 | | | | 0.695 | 0.69 |
| v/c Ratio | 0.82 | 0.59 | | 0.14 | 0.24 | | 0.38 | 0.48 | شادية بالمستانة المساهم | 0.57 | 0.43 | 0.05 |
| Uniform Delay, d1 | 45.8 | | | 37.6 | 32.4 | | | 14.3 | | 7.1 | 9.1 | 2.6 |
| Control Delay | 57.8 | 36.7 | | 37.3 | 32.5 | | 19.2 | 15.6 | | 16.6 | 10.3 | 4.1 |
| (2.2.12.3300 parts) (1.2.12.200 parts) | REPRESENTATION NAMED OF | *) 6 | *************************************** | | | | | | | | | |

5/22/2008 NCL PBS&J Inc.

Obtained from City of Miami Beach

| Euroo, Volamoo, T. | <i>*</i> | —) - | \ | * | 4— | 1 | * | † | 1 | / | ↓ | · 4 |
|--|--------------|--------------|--------------------|-------------|--|----------|------------|--|-------------|------------|--------------|--|
| Lane Group | | EBT | EBR | WBL | WBT | WBR | NBL NBL | NBT 0.0 | NBR . | SBL 0:1 | SBT 0:0 | SBR 0.0 |
| Queue Delay Total Delay | 0.0 57.8 | 0.4 37.1 | | 0.0 37.3 | 0.0 32.5 | | 19.2 | 15.7 | | 16.7 | 10.3 | 4.1 |
| LOS | E | D | 36 2 5 T | D. | (C | | ijΒ | 16.0 | | B | : B. 11.0 | <u> </u> |
| Approach Delay Approach LOS | | 46.7 | F176 F1 | 种产品 | 33.4 ///C | mar. | | 10.0 B | 1887. Sept. | 1%/2/ | , ≭B | |
| Intersection Summary | | | | | | | | | | | 74 A. | |
| Area Type: | Other | 1.7 | | | 73. | | | | | | | |
| Cycle Length: 130 Actuated Cycle Length: | 130 🕍 🖟 | | | Towns A | 海鳗 | | | | rain in | | | |
| Offset: 51 (39%), Reference Natural Cycle: \$125 | enced to | phase | 2:NBTL | . and 6:5 | SBTL, SI | art of G | areen | Ling Court | # 7 st (5) | | | 87 (************************************ |
| Control Type: Actuated- | Coordina | ated | antsa ta familiare | | 7 44 17 Mary 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 | | 8702-0- | | | | | 4. <u>4. 4.</u> 4 |
| Maximum v/c Ratio: 0.8 Intersection Signal Dela | 2 v: 20.0 | | | lr | ntersecti | on LOS | 3: B | ر دوند. ومناسبه المادة المساورة المادة المساورة المادة المساورة المادة المادة المادة المادة المادة المادة الم | | | | U/A=-(32) |
| Intersection, Capacity U | ilization | 82.5% | | | CU Leve | | | The same | MAL AND | | | |
| Analysis Period (min) 18 | ō | | | | | | | | | | | • |

| Splits and Phases: 10: 16 St. & Alton Ad | |
|---|-----------------|
| 1 1 1 2 | ♣ ø4 |
| 9.5 79.6 | 42.5 |
| 4 | ★ ø8 |
| OCCUPATION OF THE PROPERTY OF | 425 425 45 45 5 |

| Lanes, volumes, | rinniga | المحسين بين سيريت | · | *************************************** | | ± | _ | Å | L. | ί. | 1 | 7 |
|-------------------------------|--|---|---|--|--------|---|------------------|------------|---|-------------------------------------|--|------------|
| | <i>></i> | | * | 4 | ** | *** | | T | | * | ¥ | * |
| Lane Group | | | | WBL | WBI | WBR | NBL | NBII | NBR: | - SBL | SBI | SBR |
| Lane Configurations | | 4 | | | ↔ | | *1 | † % | | <u>"</u> | <u> </u> | 7 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Width (ft) | 10 | 16 | 12 | 10 | 16 | 12 | 10 | 12 | 12 | 10 | 12 | 10 |
| Storage Length (ft) | 0 | | | · . · 0 ⁷ | | ·i0 | 120 | | . 10 | 140 | | 75 |
| Storage Lanes | 0 | | 0 | 0 | | 0 | 1 | | 0 | 1 | | 1 |
| Total Lost Time (s) | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 |
| Leading Detector (ft) | 50 | 50 | | 50 | 50 | | 50 | 50 | ALL AND | 50 | 50 | 50 |
| Trailing Detector (ft) | ō | 0 | | 0 | Ö | 7 9 | 0 | 0 | ., | 0 | 0 | 0 |
| Turning Speed (mph) | 15 | | 9 | 15 | | 9 | - 15 | | 9 | 15 | | 9 |
| Lane Util. Factor | | #1:.00 | :1.00 | | 1:00 | 1.00 | 1.00 | 0.95 | 0.95 | 1.00 | 0.95 | 1.00 |
| Frt | 1.00 | 0.957 | | de la constitución de la constit | 0.967 | اگائیٹر، 4 بھروسندین امیکاند * | | 0.992 | | | | 0.850 |
| Fit Protected | | 0:977 | | | 0.991 | | 0.950 | , , , | | 0.950 | | |
| Satd. Flow (prot) | 0 | 1678 | 0 | 0 | 1720 | 0 | 1652 | 3511 | . 0 | 1652 | 3274 | 1478 |
| Flt Permitted | | 0.738 | | | 0.882 | | 0.274 | | | 0.199 | | |
| Satd. Flow (perm) | 0 | 1267 | 0 | 0 | 1530 | 0 | 476 | 3511 | 0 | 346 | 3274 | 1478 |
| Right Turn on Red | | | Yes | J. Cally Mr. | 11.000 | Yes | | | Yes | | . Com | Yes |
| Satd. Flow (RTOR) | etaria | 18 | | | 13 | Contains to be distinct | | 7 | | | | 32 |
| Headway Factor | i 1.09∵ | 1:05 | 1.00 | ≓1.09® | | ##1:00° | 1.09 | 1.00 | 1.00 | 1.09 | | 1.09 |
| Link Speed (mph) | | 30 | | 465 - 1599 - 1 - 1696 - | 30 | <u>Up arji Hariria andari</u> | zanzkin/adilania | 30 | | | 30 | |
| Link Distance (ft) | Marian Park | 407 | Tr. Fill | | 196 | 得得到 | | 276 | | | 591 | |
| Travel Time (s) | سماسه سندسيه | 9.3 | America de la composição | | 4.5 | وه المساورة | | 6.3 | | | 13.4 | |
| | 215 | 102 | 1:46 | 22 | 70 | 30 | 101 | 886 | 48 | 159 | 895 | 49 |
| Volume (vph) Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Parking (#/hr) | | | | | 10 | | | | | | 1.0 | |
| Adj. Flow (vph) | 234 | 111 | 159 | 24 | 76 | 33 | 110 | 963 | 52 | 173 | 973 | . 53 |
| Lane Group Flow (vpl | | | #H-7.20 | T 0 | 133 | 0. | 110 | ≅1015∮ | 0. | 173 | 973 | 53 |
| Turn Type | Perm | | A CONTRACTOR | Perm | | | Perm | | | pm+pt | enconstruction of the second | Perm |
| Protected Phases | | 4 | | | 8 | | | 2 | A dept | 1 | 6 | |
| Permitted Phases | 4 | | والشناء وتسييين | 8 | | | 2 | | | 6 | 6.54.98.000.000.000.000.000.000.000.000.000. | 6 |
| Detector Phases | 44. | 74.42 | | 1.448 | 8 | ine. | 1. 42 | 2) | 湖上湖 | 31: 1 | : 6 | 6 |
| Minimum Initial (s) | 27.0 | 27.0 | | 27.0 | 27:0 | | 30.0 | 30.0 | | 5.0 | 30.0 | 30.0 |
| Minimum Split (s) | 38.0 | 38.0 | | 38:0 | 38.0 | | 79:0 | 79:0 | | 8.0 | 79.0 | 79,0 |
| Total Split (s) | 42.0 | 42.0 | 0.0 | 42.0 | 42.0 | 0.0 | 79.0 | 79.0 | 0.0 | 9.0 | 88.0 | 88.0 |
| Total Split (%) | | 32.3% | | 32.3% | 32.3% | 0.0% | | 60.8% | 0.0% | | 67.7% | |
| Maximum Green (s) | 37.0 | 37.0 | 1,i., 150 idami | 37.0 | 37.0 | | 74.0 | 74.0 | | 6.0 | 83.0 | 83.0 |
| Yellow Time (s) | 4.0 | 4:0 | | 4.0 | 4.0 | Trans. | 4.0 | 4.0 | | 3.0 | 4.0 | 4.0 |
| All-Red Time (s) | 1.0 | 1.0 | بنظله اللهمواء مستعقا | 1.0 | 1.0 | | 1.0 | 1.0 | ~ | 0.0 | 1.0 | 1.0 |
| Lead/Lag | KELLEN. | | | | | | Lag | | | details an amining the state of the | | 100 |
| Lead-Lag Optimize? | CAS have significant in | E. T. dielle. Campana | | | | | Yes | Yes | datification designation of | Yes | | - 656 |
| Vehicle Extension (s) | 3.0 | 3.0 | 4 1 3 3 3 | 3.0 | 3.0 | 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1 | 3.0 | 3.0 | | | 3.0 | 3.0 |
| Recall Mode | None | None | na lagrana es alado es alaban es | None | None | | C-Max | | ~ | None | C-Max | U-IVIAX |
| Walk Time (s) | 7.0 | 7.0 | | 7.0 | 7.0 | | | | | فنستساء ساسية | 56.0 | |
| Flash Dont Walk (s) | 26.0 | 26.0 | grander og segler prede frest det i det el | 26.0 | 26.0 | | 18.0 | 18.0 | التنجي المستركية المستركية | | 18.0 | 18.0 |
| Pedestrian Calls (#/h | | | | 0 | | | 0 | | 1 | in the second second | 0. | |
| Act Effct Green (s) | Mary and a second | 38.0 | | | 38.0 | Addition to the second | 75.0 | 75.0 | ver en | 84.0 | 84.0 | 84.0 |
| Actuated g/C Ratio | | | | | | 7 | Acceptance - | 0.58 | | 0.65 | 0.65 | 0.65 |
| v/c Ratio | | 1.32 | | | 0.29 | | 0.40 | 0.50 | | 0.63 | 0.46 | 0.05 |
| Uniform Delay, d1 | | 43.8 | | | 31.9 | | 15.1 | 16.2 | | 9.1 | 11.6 | 3.3 4.3 |
| Control Delay | | 195.8 | | | 34.1 | | 20:6 | 17.3 | | 21.3 | 12.4 | 4.3 |
| | AND DESCRIPTION OF THE PARTY OF | Ricciona de Caracteria de C | | OMERICAN PROPERTY. | | | | | | | | |

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10: 16 St. & Alton Rd 2007 PM

| Lance, volumes, | ۶ | | `* | * | 4 | 1 | * | † | | 1 | 1 | * |
|---------------------------|-----------|--------|--------------------------------|-------------------------|----------------------|--------------------|-------------------------|--------------------------|---|------------------|--------------|--------------|
| Lana Gioup | | BIJ | EBR: | WEL | WET | WBR | NBL. | NBT | NBR | SBL 0.1 | 8817 0.0 | SBR 0.0 |
| Queue Delay | | 0:0 | | | 0.0 | | 0.0 20.6 | 0.1 17.3 | | 21.4 | 12.4 | 4.3 |
| Total Delay | | 195.8 | and the first manager of the s | 775 | 34.1 | CULARY CI | 20.6 | 17.3 B | 7,000 | | В | |
| LOS | | I. F | | | 041 | . sciff. | | 177 | المراجعة ا المراجعة المراجعة ال | | 13.4 | |
| Approach Delay | | 195.8 | SHIP THERET | 12-1-48-9 | 34.1 | 7883350 | <u>स्ट्रम् अस्ट्र</u> स | TO B | - 24-45 | YWYT. | - ∃B | |
| Approach LOS | 1.00 | | ii rafa | | <u>'',,√' '</u> ' '' | | | OPPOSTU |), | | | 4.5.55.24.32 |
| Intersection Summany | 849 - S | | | | | | | | | | | 7-1-2-1 |
| Area Type: © | ther | | | - p | | 7 | | | | | | لتنشف |
| Cycle Length: 130 | | w | Hardwood of Management in the | interminal district | - Service Control | eyenseriyasiyinggi | weren en | | | THE PARTY OF THE | | er re |
| Notreated Cycle Length | 130 | | | | | | | | A. Francisco | | Cherelli Mes | ad Rid |
| Offset: 51 (39%), Refere | nced to | phase | 2:NBTL | and 6: | SBIL, SI | tart of C | areen | | | 100 100 11 W | | 化酸量 利 |
| Natural Cycle: 145 | | | 1971 (199 | 多關於於 | - Tables | | | | | #40.75°.46 | 7.1.2 | |
| Control Type: Actuated-0 | Coordin | ated | ئار دارندشه الدارانيات | enthelatinalis. | unione sistem | | 74 | | | | 17.75 | |
| Maximum v/c Ratio: 1.32 | 2 2 3 2 2 | | | 1. | ntersecti | I OS | ٠. D | | | | | <u>"</u> |
| Intersection Signal Delay | /: 47.0 | 22.27. | erentera er | 11 110-20-20-20-20-2 | nersecu | I of So | OLO E | Control of the second | 77.13 | 7 W W | 7484F. | 77.77 |
| Intersection Capacity Ut | lization | 92.9% | | | SO Leve | 101.061 | VICO | idan manda missima aktis | | | and the | الأستيثيث |
| Analysis Period (min) 15 | , | | | | | | | | | | | |

Splits and Phases: 10: 16 St. & Alton Rd

| Splits and Phases: 10. 16 St. & Altorrid | |
|--|-------------------|
| The state of the s | ø4 |
| 98 798 | 42's |
| 4 | ₹ ø8 |
| RSC | 42%和推图图数:首型的电影等等等 |

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| | * | | \searrow | ✓ | - | 1 | 1 | † | * | \ | ↓ ↓ | * |
|-------------------------|--|---|--|--|---|--|----------|---|----------------------------|---|-------------|---------------|
| Lama Croup | EBL | #EBIN | BBR | WBL | WBT " | WBR | NBL: | NBT | NBR | SBL | SBILL | SBR |
| Lane Configurations | * | 7 2 | | 75 | 4 | | <u>ች</u> | <u> </u> | | ች | <u> </u> | 7 |
| Ideal Flow (vphpl) | 1900 | | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Width (ft) | 10 | 16 | 12 | 10 | 16 | 12 | 10 | 12 | 12 | 10 | 12 | 10 |
| Storage Length (ft) | -80% | k | - | 110 | | 70 , | 120 | | .0 | 140 | | 75 |
| Storage Lanes | 1 | | 0 | 1 | | 0 | 1 | ,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,, | 0 | 1 | 7.65 | - (-)(A) |
| Total Lost Time (s) | 4.0 | 4.0 | 4.0 | 4,0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 |
| Leading Detector (ft) | 50 | 50 | | 50 | 50 | | 50 | 50 | | 50 | 50 | 50 |
| Trailing Detector (ft) | Ō | 0 | | 0' | 0. | | 0 | 0 | | 0 | 0 | <u>0</u> 9 |
| Turning Speed (mph) | 15 | .d | 9 | 15 | | 9 | 15 | | 9 | 15 | | |
| Lane Util. Factor | 1:00 | 1.00 | 1.00 | 1.00 | ⊪ ₋ ⊧,1;.00÷ | 1.00 | 1.00 | 0.95 | 0.95 | 1.00 | ે 0.95 | 1.00 |
| Frt | and the state of t | 0.912 | | | 0.955 | | | 0.992 | أعادان المسالم الماران الم | | 75 75055 IS | 0.850 |
| Fit Protected | 0.950 | | WHAT | 0.950 | | | 0.950 | 2,4170 | | 0.950 | F | 1.70 |
| Satd. Flow (prot) | 1652 | 1637 | 0 | 1652 | 1714 | 0 | 1652 | 3511 | 0 | 1652 | 3274 | 1478 |
| Fit Permitted | 0.950 | | | 0.950 | | 4. | 0.274 | | | 0.199 | | 4.470 |
| Satd. Flow (perm) | 1652 | 1637 | 0 | 1652 | 1714 | 0 | 476 | 3511 | 0 | 346 | 3274 | 1478 |
| Right Turn on Red | | 7. T. | Yes | | | Yes | | | Yes | منسلطنط بالنبايي | 180.00 | Yes |
| Satd. Flow (RTOR) | Latinite is to a mallet in a dear most | 48 | | | 13 | | | 7 | | | | 32 |
| Headway Factor | 1:09 | 1.05 | 1:00 | 1.09 | 1.05 | 1.00 | 1:09 | 1.00 | 1.00 | 1.09 | | 17.09 |
| Link Speed (mph) | Militaria de Co | 30 | | Man Chamber and Add Alle | 30 | | | 30 | | | 30 | convegrana |
| Link Distance (ft) | | 407 | | | 953 | | | 276 | | المالية المراب | 591 | i e e e |
| Travel Time (s) | | 9.3 | | ekonologiania (listicia) | 21.7 | | | 6.3 | | ~ | 13.4 | |
| Volume (vph) | 215 | 102 | 146 | 22 | :70 | 30 | | 886 | 48 | 159 | 895 | 49 |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Parking (#/hr) | | E - 10# | | | 410 | | | | | ATALES. | 10 | |
| Adj. Flow (vph) | 234 | 111 | 159 | 24 | 76 | 33 | 110 | 963 | 52 | 173 | 973 | 53 |
| Lane Group Flow (vph) | | 270 | | #⊪ 24∗ | 109 | 7:7:0 : | 110 | 1015 | (i) +O | 173 | 973 | 53 |
| Turn Type | Split | | and the state of t | Split | Limite 100 100 100 100 100 100 100 100 100 10 | | Perm | | | pm+pt | | Perm |
| Protected Phases | - 4 | 4 | To take t | 8 | 8 | | Jan Sk | - 2 | | 1 | - 6 | |
| Permitted Phases | | | Mila Mila Secultura | listainen noon elistess | Equation or control of the public of the second | | 2 | | enterior filters besided | 6 | | 6 |
| Detector Phases | 4 | 14: | | 8 🖟 🖫 | r', | | 2 | 1.1.2 | | | 6 f | 100000 |
| Minimum Initial (s) | 5.0 | 5.0 | ALEK STRATING | 5.0 | 5.0 | • | 30.0 | 30.0 | | 5.0 | 30.0 | 30.0 |
| Minimum Split (s) | 21.0 | | | 10.0 | 10:0 | | 79.0 | 79:0 | | 8.0 | 79.0 | 79.0 |
| Total Split (s) | 26.0 | 26.0 | 0.0 | 16.0 | 16.0 | 0.0 | 79.0 | 79.0 | 0.0 | 9.0 | 88.0 | 88.0 |
| Total Split (%) | 20.0% | | | 12.3% | 12.3% | 0.0% | 60.8% | 60.8% | 0.0% | | 67.7% | |
| Maximum Green (s) | 21.0 | 21.0 | المتعامل والمساء | 11.0 | 11.0 | | 74.0 | 74.0 | | 6.0 | 83.0 | 83.0 |
| Yellow Time (s) | ₹.0 | 4.0 | Sales and | 4.0 | 4.0 | | 4:0 | 4.0 | | 3.0 | 4.0 | 4.0 |
| All-Red Time (s) | 1.0 | 1.0 | مسوله فالتقامية المتبايد المتبايد | 1.0 | 1.0 | <u> </u> | 1.0 | 1.0 | | 0.0 | 1.0 | 1.0 |
| Lead/Lag | | ###################################### | | | | | Lag | Lag | Marie . | | | 1.2 |
| Lead-Lag Optimize? | | | AMERICA S | el-lastitude de la latera | 7-4-50" F2-1 | | Yes | Yes | | Yes | | |
| Vehicle Extension (s) | 3.0 | 3.0 | | 3:0 | 3.0 | | 3.0 | | | | 3.0 | |
| Recall Mode | None | None | | None | None | + | C-Max | | | | C-Max | |
| Walk Time (s) | 5.0 | | 30.30 | | | Take Service | 56.0 | 56.0 | | | | 56,0 |
| Flash Dont Walk (s) | 11.0 | 11.0 | | | | a and grave all the second section of the Second | 18.0 | 18.0 | | . p.g | 18.0 | 18.0 |
| Pedestrian Calls (#/hr) | | 747. 0 . | #E.E.Z. | | 73 786 | | 0. | 0. | | 40. | . 0. | 10 |
| | 21.1 | 21.1 | THE PARTY OF | 11.2 | 11.2 | التفكيمة فليتاريب يحفظ | 76.3 | 76.3 | | 85.6 | 85.6 | 85.6 |
| Act Effct Green (s) | 0.16 | 0.16 | | The state of the s | | 多技術 | 0.59 | 0.59 | 群機步 | 0.66 | 0.66 | |
| Actuated g/C Ratio | 0.87 | 0.88 | فأواد المسادر | 0.17 | 0.68 | are her a to be being | 0.39 | 0.49 | | 0.61 | 0.45 | 0.05 |
| v/c Ratio | 53.0 | 43.5 | | 55.0 | 50.7 | | 14.5 | | | 8.5 | 10.8 | 3.0 |
| Uniform Delay, d1 | 77.8 | 67.7 | <u> </u> | 57.2 | 68.0 | | 20.2 | 16.7 | | 20.0 | 11.9 | 4.3 |
| Control Delay | 11.0 | U/ | | | | | | | | *** | | - |

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| | <i>></i> | | 7 | * | 4 | * | * | † | 1 | 1 | ļ | 4 |
|--------------------------|-------------|---|----------------------------------|-----------|----------|-----------------------------|------------------------|--|--|---------------|--|------------|
| Lane Group | | EBT | | WBL | WBT: | WBR | NBL | NBT | NBR. | SBL | SBT | SBR |
| Queue Delay | 2:0 | 1.6 | | 0.0 | | | 0:0 | 0.1 | - | 0:1 | 0.0 | 0.0 4.3 |
| Total Delay | 79.7 | 69.3 | | 57.2 | 68.0 | مار مرابع مارد مارد مارد ما | 20.2 | 16.8 | war in the latest and the | 20.1 | 11.9 | 4.5 |
| LOS | - E | | 1000 | | | riidiği. | , to | B | the the see | | ∴B. 12.7 | |
| Approach Delay | | 74.2 | | | 66.0 | | 72 a 75322 | 17.1 | K. ST 1888 | o transla | 12./ 12./ | |
| Approach LOS | | ≥ ME | | 江湖鄉 | E.C.E | | | P. D. | (1911) | | 11.00 | 255,746 |
| Intersection Summary | # V-041 | 4 (4.3) | | | | | | 在一直发生 | | | | |
| | other | | 7. (2° K) | Walle Adv | | | | | 1.1 | | 1,50 | |
| Cycle Length: 130 | | ن این در دو تو نیستاند در راید | aniou d'Imakassi | | , | | | Contractor Contractor | -er-eranguan | | ************************************** | |
| Actuated Cycle Length | 130 | | Radio | | | | | | Tree Pr | and the | W. W. | |
| Offset: 51 (39%), Refere | enced to | phase: | 2:NBTL | . and 6:9 | SBTL, Si | art of C | areen | mersen dan Persana | erentarishta | | foresette | 7.75.1900K |
| Natural Cycle: 120 | | | | | Total | | patient. | | | | 1.1013 | 6225 |
| Control Type: Actuated- | Coordin | ated | | | | enter errette ette er | elbinish kantilik sing | - Control of the Cont | 51000000000000000000000000000000000000 | | महारक्षा दशुक्त | eries. |
| Maximum v/c Ratio: 0.8 | 8 🔐 | | | | | | | CONTRACT OF | 10000 | 10.15 | 10.10.10.10.10.10 | |
| Intersection Signal Dela | y: 27.3 | | - in all a seni lana all segriti | | tersecti | | | | | TOTAL SERVICE | | TETES |
| Intersection:Capacity.Ut | ilization | 78.6% | digada iz | | CU Leve | rot Ser | vice n | | | | | |
| Analysis Period (min) 15 | 5 | | | | | | | | | | | |

Splits and Phases: 10: 16 St. & Alton Rd

| Splits and Phases: 10. 16 St. & Alton 16 | - 1 1 | |
|--|------------------------|-------------|
| \ _a+ | 12 | ₹ ø8 |
| Ø1 | 26:s | |
| 98 798 | Z0,889-96-84-94-64-96- | |
| 4 | · | |
| V 06 | | |
| The state of the s | | |

5/22/2008 NCL PBS&J Inc.

Miami Beach BODR_Revised With Existing Geometry and Split Phase 10: 16 St. & Alton Rd Lanes, Volumes, Timings

| | * | | * | €. | ₩ | * | 1 | <u>†</u> | | - | 1 | * |
|-------------------------|---|-----------------|---|---------------|------------------------------|-----------------------------|--|--|--|-----------------------|--|---------------------|
| Lane Croup | : EBL: | EBIT | EBR | WBL. | WBT | WBR | NBL | NBT' | NBR | _ 88F; | SBT | SBR |
| Lane Configurations | | 43 | | | 4 | | ኻ | † } | | <u> </u> | <u> </u> | 7 |
| Ideal Flow (vphpl) | 1900 | | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Width (ft) | 10 | 16 | 12 | 10 | 16 | 12 | 10 | 12 | 12 | 10 | 12 | 10 |
| Storage Length (ft) | · | | . 0 | 0. | | 0 | ୍ 120 ^ଜ | 3 33 43 | , O | 140 | be Sala | 75 |
| Storage Lanes | 0 | | 0 | 0 | | 0 | . 1 | | 0 | 1 | and the second s | . F |
| Total Lost Time (s) | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4:0 | 4.0 | 4.0 | 4.0 |
| Leading Detector (ft) | 50 | 50 | | 50 | 50 | | 50 | 50 | | 50 | 50 | 50 |
| Trailing Detector (ft) | 0 | 0 | | Ō | 0 | | 0 | 0 | | . 0 | 0 | 0 |
| Turning Speed (mph) | 15 | | 9 | 15 | | 9 | 15 | | 9 | 15 | ~ | 9 |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 1.00 | _100 | # :1.00 | 1.00 | 0.95 | 0.95 | 1.00 | 0.95 | 1.00 |
| Frt | ### | 0.957 | | | 0.967 | | | 0.992 | | | | 0.850 |
| Flt Protected | | 0:977 | | | 0.991 | | 0.950 | 1100 | ar. | 0.950 | | |
| Satd. Flow (prot) | 0 | 1678 | 0 | 0 | 1720 | 0 | 1652 | 3511 | 0 | 1652 | 3274 | 1478 |
| Flt Permitted | | 0.977 | | | 0.991 | | 0.274 | Language and the state of the s | | 0.199 | | |
| Satd. Flow (perm) | 0 | 1678 | 0 | 0 | 1720 | 0 | 476 | 3511 | 0 | 346 | 3274 | 1478 |
| Right Turn on Red | | | Yes | | 17. 1987. 12. | Yes | | 1.7 | Yes | | | Yes |
| Satd. Flow (RTOR) | فده العدد فاصر فيسيستمال التسفر | 15 | di. In Buseth Bullion | 1 | 10 | | | 7 | | | ana company and a | 32 |
| Headway Factor | 1.09 | 1.05 | 1.00 | 1.09 | 1.05 | 1.00 | 1:09 | 1.00 | 1.00 | 1.09 | | 1.09 |
| Link Speed (mph) | هناه فاستنفقه بيسية الخديد الطائلة الوالة | 30 | | | 30 | | | 30 | | 9771117F - 1777-1767F | 30 | SECTION OF SERVICES |
| Link Distance (ft) | | 407 | | | 953 | | | 276 | | | maria de la companya | |
| Travel Time (s) | Companies de Sandin de Prof. des 1990. | 9.3 | ,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,, | | 21.7 | | | 6.3 | | | 13.4 | |
| Volume (vph) | 215 | 102 | 146 | 22 | 70 | 30 | 101 | 886 | . 48 | 159 | 895 | 49 |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Parking (#/hr) | | ::/d0# | | | , do | | Miles Park | Principle in | | | 10 | |
| Adj. Flow (vph) | 234 | 111 | 159 | 24 | 76 | 33 | 110 | 963 | 52 | 173 | 973 | 53 |
| Lane Group Flow (vph) | 0 | 504 | - 10 | (0) | 133 | 0 | 110 | 1015 | | 173 | 973 | 53 |
| Turn Type | Split | Ed and district | | Split | | | Perm | a d and a behavior limited | | pm+pt | | Perm |
| Protected Phases | 4 | -4 | 4 9.3 | - 8 | 8 | 127.5 | المراجع المراج المراجع المراجع المراج | 2 | ع المراجعة المراجعة المراجعة المراجعة ا | 1 | 6 | |
| Permitted Phases | | | | | | | 2 | | | 6 | | 6 |
| Detector Phases | 4 | 44 | | 8 (2.4 | 8 | | 2 | <u>::::2</u> . | | | 6 | 000 |
| Minimum Initial (s) | 5.0 | 5.0 | | 5.0 | 5.0 | | 30.0 | 30.0 | | 5.0 | 30.0 | 30.0 |
| Minimum Split (s) | 21.0 | 21.0 | | ÷10.0° | 10.0 | | ° 79.0 | 79.0 | | # 8.0° | 79.0 | 79:0 |
| Total Split (s) | 26.0 | 26.0 | 0.0 | 16.0 | 16.0 | 0.0 | 79.0 | 79.0 | 0.0 | 9.0 | 88.0 | 88.0 |
| Total Split (%) | 20.0% | 20.0% | 0.0% | 12.3% | 12.3% | 0:0% | 60.8% | | 0.0% | | 67,7% | |
| Maximum Green (s) | 21.0 | 21.0 | | 11.0 | 11.0 | | 74.0 | 74.0 | Siderate and Artificial | 6.0 | 83.0 | 83.0 |
| Yellow Time (s) | 4.0 | 4.0 | | 4:0 | 4.0 | | 4.0 | 4.0 | | 3.0 | 4.0. | 4.0 |
| All-Red Time (s) | 1.0 | 1.0 | | 1.0 | 1.0 | | 1.0 | 1.0 | ere miranara estra | 0.0 | 1.0 | 1.0 |
| Lead/Lag | | | | | | | Lag | | <u> </u> | | 性中基 | |
| Lead-Lag Optimize? | 11211120000 | | | | | | Yes | Yes | *************************************** | Yes | | |
| Vehicle Extension (s) | 3.0 | 3:0 | Talver: | 3.0 | | | 3:0 | | | 3.0 | | 3.0 |
| Recall Mode | None | None | | None | None | | C-Max | | | None | C-Max | |
| Walk Time (s) | 5.0 | 5.0 | | سنند | City on a name fellow common | | 56.0 | 56.0 | | | 56.0 | 56.0 |
| Flash Dont Walk (s) | 11.0 | 11.0 | | | | | 18.0 | 18.0 | 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 | | 18.0 | 18.0 |
| Pedestrian Calls (#/hr) | | | | | | ip Taking | 0 | | | | 0 04.0 | 0 |
| Act Effct Green (s) | | 22.0 | | | 11.7 | ne par en en en en en en en | 75.0 | 75.0 | z grant monteoniae | 84.2 | 84.2 | 84.2 |
| Actuated g/C Ratio | | 0:17 | | | | | 0.58 | 0.58 | 70000000000000000000000000000000000000 | 0.65 | 0.65 | 0.65 |
| v/c Ratio | annual de la construción de | 1.70 | | | 0.81 | | 0.40 | 0.50 | | 0.62 | 0.46 | 0.05 |
| Uniform Delay, d1 | | | | | | | 15.1 | 16.2 | ـ تُلاَسُمُ | 9.0 | 11.5 | 3.2 |
| Control Delay | | 362.5 | | ···· | 84.5 | | 20.6 | 17.3 | | 20.9 | 12.4 | 4.3 |

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Miami Beach BODR_Revised With Existing Geometry and Split Phase 10: 16 St. & Alton Rd Lanes, Volumes, Timings

| Lanes, volumes, r. | 90 | | المستحدث المستحدي | | - | | | | | • | |
|--|--|-------------------------|--|---|--|-------------|--|--------------------------|---------------------|--|-------------------------|
| | <i>▶</i> → | ~ | ~ | :- | * | 4 | † | 1 | - | ↓ | * |
| | | 7 | 7 | | | | | DON'S | ' '6'A' | ് രിമ്മാ | േരത്ത |
| Lane Group' | | | WBL | WBTN | WBR. | NBL | NBII | NBRU | SBL | | SBR |
| Queue Delay | 0.0 | | | 0.0 | | 0.0 | 0.1 | | 0.7 | : <u>:</u> 0.0; | 0.0 |
| Total Delay | 362.5 | | | 84.5 | | 20.6 | 17.3 | نتال سنند داده د د داند. | 21.0 | 12.4 | 4.3 |
| LOS | ie za ka F . | | | F | ور الم | :::XO | ∍ B | | C | والمستحدث والساوات | A |
| Approach Delay | 362.5 | | | 84.5 | | | 17.7 | racura: | 212231 43 | 13.2 | TELOGRAPHIC STREET |
| Approach LOS | | | en e | MEE! | | | · '',B' . | | | В | |
| Line & Cold to the state of the | | 0.89 | | | Michigan | | | Sec. 19 | | 31726 | |
| Intersection Summary | and the second s | | | i de la deserva de la color La color de la | | | | | 1,4 | | |
| the state of the s | Other | 1474 MAIL - | <u>- Para</u> | | | | | | | | استراماسانات |
| Cycle Length: 130 | 700 500 500 | | | TARE OF THE | e este s. | | Canal Ca | 25 V. T.S. | #20m | | |
| Actuated Cycle Length: Offset: 51 (39%), Refer | | O·NIDTI | and 6.5 | RTI SI | art of C | ireen | 7.5 | di ana | 11. FEB. | all and and and and an article and an article and an article and article article and article article and article article and article artic | The same of the same of |
| Offset: 51 (39%), Refer | enced to priase | ZINDIL | عان ن | | | | TO THE | TAR | | | |
| | Caardinated | A STATE OF THE STATE OF | de la companya de la La companya de la co | 2000271 | The state of the s | 1 4 4 5 5 5 | | Min dalatata IA | - Sidd Seed to said | <u> </u> | introduced the l |
| Control Type: Actuated | -Coordinated | ati is graph of | | | | 37.2570 | | | al make salah | | 21.0 52 |
| Maximum v/c Ratio: 1.7 | (U security 1944) | | <u>northala</u> In | itersecti | nn I OS | · F | | | | | الكمتفضية أست |
| Intersection Signal Dela | ay: //.b | | | | | | | | | | |
| Intersection Capacity | tilization 92.9% | | | CECAC | | | The state of the s | المائم وأواليا | and the second | | |
| Analysis Period (min) 1 | 5 | | | | | | | | | | |

Splits and Phases: 10: 16 St. & Alton Rd

| - 1 1 n2 | <u>♣</u> ø4 . | ₹ ø8 |
|--|---------------|-------------|
| 96 796 | 26 % | 16 \$ |
| ₩ 26 | | |
| RPIS CAREACTER TO THE PROPERTY OF THE PROPERTY | | |

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CITY OF MIAMI BEACH PUBLIC WORKS DEPARTMENT ENGINEERING DIVISION

Intersection: 16th ST & Alton Road 11/18/2008

| ntersection: 10 | 6th ST & Alton Road | | | 11/10/2000 | | |
|-----------------|---|--------------|--------------|--------------|--------------|-------|
| | Time | 4:00-4:15 PM | 4:15-4:30 PM | 4:30-4:45 PM | 4:45-5:00 PM | Total |
| | Total Observed | 44 | 26 | 28 | 26 | 124 |
| Mode | Bicycle | | | | | |
| | from 16 ST Left on to Alton Rd. South | 4 | 0 | 2 | 8 | 14 |
| | from 16 ST Right on to Alton Rd. North | 3 | 4 | 1 | 1 | 9 |
| | from 16 ST across Alton Rd. Westbound | 2 | 2 | 4 | 2 | 10 |
| | from 16 ST Left on to Alton Rd. North | 1 | 1 | 0 | 1 | 3 |
| | from 16 ST Right on to Alton Rd. South | 1 | 0 | 0 | 1 | 2 |
| | from 16 ST across Alton Rd. Eastbound | 6 | 5 | 5 | 4 | 20 |
| Direction | from Alton Rd Left on to 16 ST East | 11 | 0 | 5 | 1 | 17 |
| | from Alton Rd Right on to 16 ST West | 1 | 0 | 0 | 0 | 1 |
| | from Alton Rd across 16 ST Southbound | 6 | 5 | 6 | 2 | 19 |
| | from Alton Rd Left on to 16 ST West | 1 | 0 | 0 | 1 | 2 |
| | from Alton Rd Right on to 16 ST East | 0 | 0 | 1 | 0 | 1 |
| | from Alton Rd across 16 ST Northbound | 8 | 9 | 4 | 5 | 26 |

Attachment 3

CITY OF MIAMI BEACH PUBLIC WORKS DEPARTMENT ENGINEERING DIVISION

Intersection: 16th ST & Alton Road

11/18/2008

| | Time | 5:00-5:15 PM | 5:15-5:30 PM | 5:30-5:45 PM | 5:45-6:00 PM | Total |
|-----------|---|--------------|--------------|--------------|--------------|-------|
| | Total Observed | 21 | 19 | 20 | 12 | 72 |
| Mode | Bicycle | | | | | |
| | from 16 ST Left on to Alton Rd. South | 2 | 2 | 2 | 0 | 6 |
| | from 16 ST Right on to Alton Rd. North | 1 | 1 | 2 | 2 | 6 |
| | from 16 ST across Alton Rd. Westbound | 3 | 3 | 1 | 3 | 10 |
| | from 16 ST Left on to Alton Rd. North | 1 | 0 | 0 | 1 | 2 |
| | from 16 ST Right on to Alton Rd. South | 1 | 0 | 1 | 0 | 2 |
| | from 16 ST across Alton Rd. Eastbound | 4 | 1 | 1 | 1 | 7 |
| Direction | from Alton Rd Left on to 16 ST East | 0 | 3 | 2 | 1 | 6 |
| | from Alton Rd Right on to 16 ST West | 0 | 2 | 1 | 0 | 3 |
| | from Alton Rd across 16 ST Southbound | 2 | 4 | 2 | 0 | 8 |
| | from Alton Rd Left on to 16 ST West | 3 | 0 | 1 | 1 | 5 |
| | from Alton Rd Right on to 16 ST East | 1 | 1 | 1 | 0 | 3 |
| | from Alton Rd across 16 ST Northbound | 3 | 2 | 6 | 3 | 14 |

